

# **Appendix I**

## **METHODOLOGY**

### **Objectives**

The objective of this study is to describe and project the number and types of jobs in the hazardous waste labor market, by collecting detailed data on the existing U.S. hazardous waste remediation labor force engaged. The focus of data collection has been federal cleanups, because they provide detailed data through Davis Bacon certified payrolls. These federal sites include those under the responsibility of EPA, DOE, and DOD.

Other data collected was from removal actions, through the use of EPA's Removal Cost Management System (RCMS), from state/territory sites with data collected by EPA in conjunction with ASTSWMO, and emergency response forms used in 5 State data bases (three in Arizona, one in California, and one in New Jersey).

### **Privacy**

Protection of individual worker privacy superseded all else in the collection and use of certified payroll data. A protocol was devised, stating exactly which data from the certified payrolls could to be input into the data base developed by Ruth Ruttenberg & Associates, Inc. A disclaimer was drawn up by NIEHS and this contractor, specifically stating that no personal identifiers would be taken from the payrolls and put into the data base. (See Appendix for relevant documents.)

### **Background Literature Review**

Before beginning the process of site selection, a literature review was completed, focussing on relevant studies of hazardous waste employment. Sixteen studies were reviewed and discussed with EPA before the data collection portion of the study began. These studies included: list of tables available but not attached them here. (The literature review is available on requested.) Additional studies were reviewed as work on this report continued.

### **Site Selection**

Two regions of the country were originally chosen for their abundance of hazardous waste site completions. An effort was made to study sites in Southern New Jersey and the San Francisco Bay Area of California. After New Jersey data collection was complete, it became evident that a regional grouping of Northern California sites would be much more difficult to capture, due partially to the fact that the majority of these sites are either private or DOD lead sites. Therefore, a more geographically diverse array of sites was chosen -- an array also diverse in size, responsible party, types of contaminants, and types of remedies.

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The objectives of this study were to collect as detailed data as possible on the composition of the existing U.S. labor force engaged in hazardous waste remediation, with a focus on sites on the National Priority List and/or under the responsibility of the U.S. Department of Energy or U.S. Department of Defense. Balancing access to data with an array of labor markets, types of site contamination, and types of remediation technology used was a major struggle. Protecting the privacy of those hazardous waste workers whose efforts were being documented was of the highest priority.

#### **Sites For Which Certified Payroll Data Were Obtained**

Certified (Davis Bacon) payroll data were obtained for 17 sites. Daily labor logs were obtained for one additional site - Lone Pine Landfill. The 17 sites for which certified payroll data were obtained included: Bog Creek, NJ; Bayou Bonfouca, LA; Bridgeport Rental and Oil Services, NJ; Cherokee County Site, KS; Durango UMTRA Site, CO; Grand Junction UMTRA Site, CO; Hollingsworth Solderless Terminal Company, FL<sup>1</sup>; K-25 Gaseous Diffusion Plant, TN; Kem-Pest Site, MO; Lipari Landfill, NJ; Moyer Landfill, PA; New Lyme Landfill, OH; Paducah Gaseous Diffusion Plant, KY; Rifle UMTRA Site, CO; Sacramento Army Depot, CA; Shiprock UMTRA Site, NM; South Tacoma Channel, WA.

#### **Sites for which RCMS Data were Obtained**

Data from eight federal removal sites were obtained from EPA Regional offices. The data are from EPA's through the Removal Cost Management System (RCMS). These sites were from EPA Regions III, IV, V, and VII, and included: Martinsburg Drum Dump, WV; Carolina Creosotes II, NC; Chemet, TN; Anderson Residential Lead, SC; Bernard Neal, WV; Superior Polishing, MI; Banister Road Drum, MO; and Turner Seed Company, IA.

#### **Sites for Which Qualitative Data or Other Quantitative Data were Collected**

Although certified payroll data were not obtained, other data are collected or interviews were held to obtain labor market data from Battery Plant, CA; Ciba Geigy, NJ; Concord Naval Weapons Station, CA; Embarcadero, CA; Hunter's Point Naval Shipyard, CA; McClellan Air Force Base, CA; Pillar Point Air Force Station, CA; Raytheon, CA; Richmond Harbor Dredge Site, CA; Reactive Metals, Inc., OH; Weldon Spring, MO; X-10, Oak Ridge, TN; and Y-12, Oak Ridge, TN.

#### **Other Sites for Which Data was Pursued**

Other sites for which data were pursued included McClellan Air Force Base, CA; Mather Air Force Base, CA; Fairchild, CA; Fort Ord Army Base, CA; Granite City Steel, IL; Raytheon, CA; and Intel,

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<sup>1</sup> Payrolls were similar to certified payrolls, but the site is not covered by Davis Bacon.

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CA and a large number of other federal removal sites. Certified payroll data for these sites were not obtained either because significant cleanup work had not yet started or because the potentially responsible parties were unwilling to share data on the site.

#### **Types of Data, Their Acquisition, and Methods for Input and Analysis**

For the purpose of this study, nearly 100,000 records of payroll data across numerous sites have been collected. There are more than 100 tables and 40 charts<sup>2</sup> which have been developed to assist in making labor market projections. Numbers and computations have been checked, but given the volume of data, some clerical or mathematical errors may still exist.

To the extent possible, this study used certified payrolls as its primary data source. A certified payroll is a record of payment from either a contractor to a subcontractor or from a contractor to whomever it is for whom they work. These records are kept on all Fund-lead projects and include all persons who were paid during a pay period (typically one week). They contain the worker's name, address, social security number, hours workers (both standard and overtime), hourly pay rate, and job category. (See Appendix for example) For Lone Pine, daily labor logs, rather than certified payrolls, were obtained. These gave significant detail, but were different from payrolls -- data were reported in person-days rather than in hours and no wage data were supplied. (See Appendix for example)

For most of the sites studied, certified payrolls were available for only a portion of the remediation work. More often the payrolls represented discrete tasks such as constructing a decontamination pad, building a pump and treat system, or drilling wells. For some sites there are data gaps for specific months, due either to lack of work at the site for that month or simply due to missing data. In at least one instance, at the Grand Junction UMTRA site, there was a period of two weeks during which there was no work, but limited stand-by pay - because of a work site fatality.

For one site, Hollingsworth Solderless Terminal Company, the payroll data received were regulated by provisions of the Davis-Bacon Act (which requires that federal contractors pay prevailing wages at their construction sites.). Hollingsworth is a non-union plant and industrial workers who were maintaining a pump and treat system.

Institutions with data were identified and contacted.<sup>3</sup> Examples of these institutions include cleanup contractors, EPA area offices, DOE field offices, and the Army Corps of Engineers. Each was provided with a fact sheet on the study, data collection protocol, and a non-disclosure statement. If access to data was granted, data were processed in one of the following three ways: copied by staff

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<sup>2</sup> These tables and charts are available from the contractor.

<sup>3</sup> A detailed list of specific contacts made in order to obtain data may be obtained from the contractor.

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of Ruth Ruttenberg & Associates, Inc., (RRA). for later entry into the data base created for this study; reviewed by staff of RRA at contractor offices and needed information directly put into the automated data base; or data were assembled at the contractor office and shipped to RRA for data input.

In no instances were the names, addresses, or social security numbers of an individual identified in the data base established by RRA. Only job category, town of residence, and information about hours and pay were recorded. After data input was completed, any data in possession of RRA were permanently destroyed.

#### **Data Not Collected**

An undetermined number of workers are trained as well as in their particular craft, but (emergency responders). The number of trained emergency responders on site is not included. Many changes are made on-site once work begins and unexpected problems often appear. Remedies laid out in the RI/FS and the proposals are often not the specific remedy that is implemented. Completed follow-up on there changes was not done.

RCRA sites, small sites, and site cleanups staffed by on-site industrial workers are under-reported in this study. To some degree this is a result of not gaining the technical support necessary to use the EPA CERCLIS data base.

This study was aided greatly by the help of staff at the Army Corps of Engineers, the Department of Energy, and EPA who allowed this contractor access to payroll records.

#### **Some Problems with the Data From Certified Payrolls and Daily Labor Logs**

Data for ten sites in this study were collected from certified payrolls and daily labor logs. While certified payrolls and daily labor logs are exacting sources of data, even they don't provide for a totally consistent and accurate picture of work and wages for a given week. Adjustments to payroll, varying ways of counting hours and benefits, incomplete entries, and technical problems with duplicating records are just some reasons why there are some problems in clearly interpreting all the data. Within a given site there were many subcontractors, and each subcontractor had its own way of delineating job categories. Not each site or subcontractor defines job category in the same way. The treatment of apprentices and journeymen is sometimes as a group and sometimes within a specific trade. Some payrolls include hourly white collar workers and some do not. Below are examples of some of these data problems -- first for payroll data and then for equipment lists:

For all databases, all hourly rate averages were computed only from those records for which the hourly rate was greater than zero.

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### **Lack of Standardization in Field Names**

Category names are similar, but not necessarily the same between databases, and between tables. On some tables carpenters and millwrights have been combined, on others they may not have been (although this problem may have been corrected in recent days). There may also have been instances where, for example, in some cases carpenters and millwrights were combined into the category "carpenter", while in other cases they might have been combined into a category called "carpenter/millwright", which may leave the reader questioning the exact composition of our categories.

In all instances, entries in the "category of worker" field were combined into groupings large enough to easily handle and analyze, yet small enough to be meaningful. For example, "laborer" and "laborer special" were combined into "laborer," "equipment operator" and "operating engineer" were combined into "operator," "asbestos 14" and "asbestos 89" were combined into "asbestos," and "truck driver," "driver," and "teamster" were combined into "truck driver."

### **Lack of Standardization of Procedures**

Database queries can be very complicated sometimes, and slight variations can lead to large discrepancies in the data pulled. Sensitivity analysis around some of these variances would be useful in the future.

### **Lack of Complete Data Per Record**

For many entries all data was not available from the certified payroll or daily labor log.

Some categories have been combined across sites, e.g., drivers and truck driver; plumbers and pipe fitters; carpenters and millwrights. They could be dis-aggregated if useful for research. At Hollingsworth, the definition of laborer may not be consistent with the construction labor category used for the other nine certified payroll sites.

In the effort to determine where workers lived, there were often many gaps. For some sites gaps were more severe than others, so that, for example, gross pay for those cities included in the Bog Creek Farm data base were only \$231,000 of a gross payroll of \$2.2 million.

In instances where data for a month or more is missing from a data base, the reason may have been that there was no remediation work on site; it may have been that the records were not supplied.

For hourly-rate by category tables: categories for which all records listed \$0.00 as the hourly rate were not included on the table (for instance, "project manager" for the Rifle database).

Certain non-category items were included in the category field of several databases, including: "other NECA earnings," "holiday," "rain out," "sick time," "vacation pay," "retro pay," and "travel time."

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These categories and the pay fields of these records were not included in most tables.